

STEP 401710

2

ACCESSION NR: A3000475

S/056/62/043/006/009/067

AUTHOR: Kornfel'd, M. I.; Lemanov, V. V.

TITLE: Local distortions of a crystal lattice by impurity ions.

PERIODICAL: Zhurnal eksper. i teoret. fiziki, v. 43, no. 6, 1962, 2021-2023

TOPIC TAGS: crystal lattice local distortions, impurity ions, nuclear magnetic resonance, sodium chloride, silver, potassium, lithium, bromine, iodine, rubidium

ABSTRACT: The use of nuclear magnetic resonance to investigate the distortion of the sodium-chloride lattice in the vicinity of various impurity ions, based on the use of some "critical sphere" around the impurity ion (at the boundary of which the distortion has a given value), previously yielded results that did not agree well with experiment. The present article is devoted to a theoretical estimate of the distortion-sphere dimensions using the theory of elasticity of continuous media, deriving expressions for the deformation of an impurity sphere imbedded in an isotropic elastic medium. It is shown that good agreement between the calculations and the experimental data can be obtained if the interatomic distances of the corresponding crystal lattices are used as the characteristic dimensions. The impurities employed were ions of silver, potassium, lithium, bromine, iodine, and rubidium. There are 2 tables.

Card 1/2

ACCESSION NR: A3000475

S/056/62/043/006/009/067

ASSOCIATION: Institut poluprovodnikov Akademii nauk SSSR (Institute of Semiconductors, Academy of Sciences USSR)

SUBMITTED: 7 Jul 62

DATE ACQUIRED: 18 Jan 63

ENCLOSURES: 00

NR REF PRIN: 002

OTHER: 002

Card 2/2